AMERICAN JOURNAL OF PHARMACY

★ AND THE SCIENCES SUPPORTING PUBLIC HEALTH ★



The Prescription—A Confidential Record,
Not a Public Document.

Since 1825 *August 1953*

Bacteriology - - Biology
Chemistry - - Pharmacy



Since 1821

Undergraduate courses of study in these four sciences lead the way to interesting and successful careers. Selected Graduate studies available also. Co-educational. Classes commence each September.

Send for a catalog and details.

Philadelphia College of Pharmacy and Science

43d Street, Woodland and Kingsessing Avenues

Philadelphia 4, Pa.

American Journal of Pharmacy

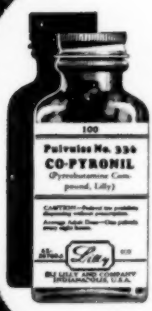
Published monthly by the Philadelphia College of Pharmacy and Science
43d Street, Kingsessing and Woodland Avenues, Philadelphia 4, Pa.

Annual Subscription $4.00 — Foreign Postage, 25 Cents Extra
Single Numbers, 40 Cents — Back Numbers, 50 Cents

Entered as Second-Class Matter March 27, 1937, at the Post Office at Philadelphia, Pa.
Under Act of March 3, 1879

IN ANY ALLERGY

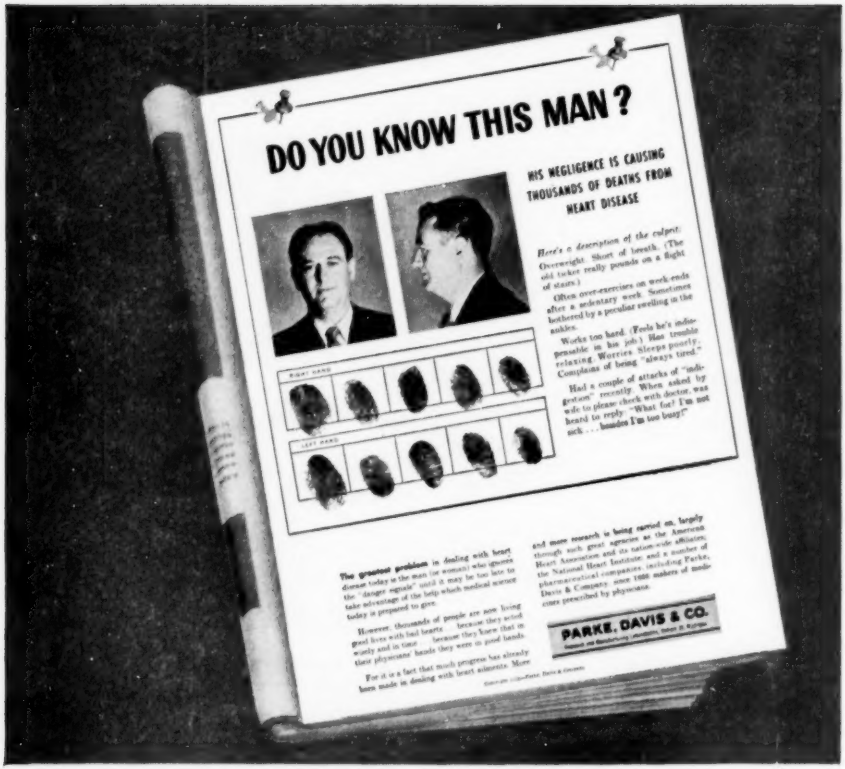
'Co-Pyronil'*
frequently affords
more profound,
more prolonged
relief with
fewer side-effects
than any other
known
antihistaminic.



*'Co-Pyronil' (Pyrrobutamine Compound, Lilly)

Lilly

Order an adequate supply today!



Here is an advertisement that is running in LIFE, Time, Newsweek, and Collier's.

We like to think it may be more *truly helpful* to people than almost any other ad they run across in these influential magazines. It is the latest message in a campaign we started 25 years ago this month—an effort to make the subject of *prompt and proper medical care* "come alive" to the man on the street, the woman in the home.

We do not employ what the advertising experts call "scare copy." And we know better than to scold people—rather, we try to be good-natured in putting over a serious message. Above all else, we keep before us the thought that the unkindest thing any advertising can do is to create uncalled-for optimism or raise false hopes.

It is gratifying to have this advertising spoken of as performing a distinct public service. We like to get "high readership" ratings from organizations equipped to measure and evaluate the extent to which advertising is seen and read.

Most of all, though, we are pleased to get almost daily evidence from the field that these current advertisements seem to be *nudging people into action*—and that the specific examples we are citing about the tragic consequences of delay are helping to generate among people a heightened respect for the professions of medicine and pharmacy.

MEDICAMENTA VERA

Parke, Davis & Company

DETROIT, MICHIGAN

AMERICAN JOURNAL OF PHARMACY

AND THE SCIENCES SUPPORTING PUBLIC HEALTH

Since 1825

LINWOOD F. TICE, Ph. G., B. Sc., M. Sc., Editor
Kenneth Avis, M. Sc., Editorial Assistant
Charles E. Welch, Jr., B. S., M. A., Editorial Assistant
John E. Kramer, B. Sc., Business Manager

COMMITTEE ON PUBLICATION

E. Fullerton Cook, P. D., Ph. M., M. S., Chairman
Mitchell Bernstein, P. D., M. D., F. A. C. P.
Marin S. Dunn, A. M., Ph. D.
Louis Gershenfeld, P. D., Ph. M., D. Sc.
Joseph W. E. Harrisson, P. D., Sc. D.
Ivor Griffith, P. D., Ph. M., D. Sc., F. R. S. A., ex officio

Vol. 125 AUGUST 1953 No. 8

CONTENTS

Editorial

Inspection of Prescription Files 256

Articles

Further Studies on the Antibacterial Efficiency of Heliogen. By L. Gershenfeld and B. Witlin 258

Pharmacy's Current Economic Problems. By J. N. McDonnell 265

Pharmacist's Quest. By Louis H. Pink 280

Selected Abstracts 287

EDITORIAL

INSPECTION OF PRESCRIPTION FILES

THE exclusion of prescription files from government inspection as a part of H. R. 5740 was one of the few achievements of pharmacy, legislation-wise, in recent years.

This bill commonly known as the "factory inspection bill" was made necessary by the Supreme Court ruling in the *Cardiff* case wherein the Court held that the inspection of food and drug plants without permission was not authorized under the Food, Drug and Cosmetic Act.

Commissioner Crawford, of the Food and Drug Administration, was opposed to the exclusion of prescription files as a part of his inspection powers. He cited as the primary reason for needing this power checking on the illegal sales of barbiturates, explaining that a check of inventory and sales on prescription was required in order to establish the fact that such drugs were being sold over the counter.

Both the N. A. R. D. and the A. Ph. A. opposed Mr. Crawford's request for such authority and pointed out that the majority of pharmacists abide by the law and that such inspection authority would constitute an invasion of the confidential records existing between the physician, pharmacist and patient. Concern was also expressed over statements made by Mr. Crawford to the press which pictured pharmacists as frequent violators of federal legislation restricting the sale of barbiturates to prescriptions.

In the hearings held before the passage of this bill it was brought out clearly that the inspection of prescription files was not included as a part of the inspection powers granted the F. D. A. For this all pharmacists should rejoice but not for the reason that those government officials who have a police officer psychology may think.

Most pharmacists are fully aware of their present responsibilities both legal and professional. They, furthermore, make a conscientious effort to do what is right and in the patient's or customer's real interest. While at times a pharmacist may be guilty of some technical infraction of the law he rarely does so with a flagrant disregard of his customer's health and welfare. To suggest that phar-

macists have only profit as their motivation is grossly unfair and unwarranted. That a very small minority are so motivated is a matter of record but medicine too has those of similar ideology.

Repeated legislative enactments have already so narrowed the pharmacist's exercise of his professional prerogatives and skill that it is nothing short of a disgrace. The Durham-Humphrey Amendment while purported by some segments of pharmacy to be a great boon is the worst legislation that our profession ever faced. It would be interesting indeed to have its one-time proponents now list the great advantages which it has brought the profession. As one of the many accomplishments it was claimed to bring we might cite the sharp line of demarcation between prescription legend drugs and those that could be sold over the counter. This indeed it has done but it is somewhat ironic that a few greedy individuals who envisioned increased sale of over the counter drugs now witness the continued loss of such business to non-drug outlets. It is difficult to see how the pharmacist is benefited when a company which has never sold outside drug channels is forced to label certain of their products so that they can legally be sold by a grocer. And thus we could go on and on but to what avail?

If the present trend continues and is not reversed pharmacists will have their every act prescribed or proscribed with the reading of laws and labels their only requisite. Nothing at all will be left to their professional judgment or skill and our professional demise will be lasting evidence of our stupidity and that of certain of our prophets and leaders.

Again we say, the exemption of prescription files from inspection is a small but significant reversal of recent events. That we shall have many future opportunities to prevent the further invasion of our profession is certain and we should not fail to take resolute action.

L. F. Tice



FURTHER STUDIES ON THE ANTIBACTERIAL EFFICIENCY OF HELIOGEN

By Louis Gershenfeld * and Bernard Witlin **

RECENTLY, we reported on the bactericidal efficiency of Heliogen *** (1), a preparation marketed as tablets, wrapped individually in aluminum foil and when dissolved in water, each tablet "reacts to liberate 25 milligrams of free iodine." Many inquiries were received as to the pH of Heliogen solutions (tablets dissolved in water), the efficiency of the latter at different pH values, the effect of serum upon such solutions, and also what was meant specifically by our statement: "The conventional 4 mm. loopful transfer used in testing disinfectants revealed that Heliogen is an effective antibacterial agent even in weak dilutions."

The studies reported herein concern themselves with the above.

I. pH Determinations

(A) Individually for each test, one Heliogen tablet was dissolved in 60 ml. of distilled water and also in tap water separately in each instance at temperatures of 20° C., 37° C. and 50° C. The pH readings were made immediately and 1, 2, 3 and 5 minutes after the introduction of each Heliogen tablet in the water. A Beckman model H potentiometer was used. The findings were as follows:

pH Findings on Heliogen Tablets During Disintegration and Solution in Water (One Tablet Dissolved in 60 ml. Water)

	Temperature	pH Minutes				
	C°	Immed.	1	2	3	5
Distilled Water	20	4.5	4.9	5.3	5.5	5.6
	37	4.5	5.1	5.4	5.5	5.6
	50	4.5	5.3	5.5	5.5	5.6
Tap Water	20	6.8	5.1	5.5	5.5	5.6
	37	5.1	5.6	5.6	5.6	5.6
	50	5.1	5.6	5.6	5.6	5.6

* Professor of Bacteriology and Director of the Department of Bacteriology, Philadelphia College of Pharmacy and Science, Philadelphia, Pennsylvania.

** Associate Professor of Bacteriology, Philadelphia College of Pharmacy and Science.

*** Manufactured by Heliogen Products Inc., Long Island City 3, N. Y.

(B) Though solutions of Heliogen are buffered, it was deemed advisable to note the antibacterial efficiency of such solutions at different pH readings. This would be of value in practice when such solutions are prepared with different kinds of tap waters and also used in body cavities of variable pH values. In our previous study we found that *Micrococcus pyogenes* var. *aureus* was most representative of the resistant vegetative forms of bacteria which we are apt to encounter in body tissues. Accordingly *M. pyogenes* var. *aureus* strain #209 (2) and also a gram negative organism *S. typhosa* Hopkins' strain (2) were employed as the test organisms. These two test bacteria possess a known resistance to phenol (2).

One Heliogen tablet was dissolved separately in 60 ml. of McIlvaine's buffer solution (3) at pH values varying between 2.2 and 8.0. To these solutions measured in Erlenmeyer flasks in a water bath at 37° C., 0.5 ml. of 24 hour-old cultures of *Micrococccus pyogenes* var. *aureus* #209 and *Salmonella typhosa* Hopkins' strain was added separately. All solutions were tested immediately and at time intervals of 10, 20, 30, 45, 60, 90 and 120 seconds. The *entire contents* of each flask were separately transplanted into 60 ml. of double strength (2x) F. D. A. broth (1) containing 2 per cent sodium thiosulfate (as an inactivator for free iodine).

Findings

In all instances one Heliogen tablet dissolved in 60 ml. of McIlvaine's buffer solution was effective at 37° C. against *M. pyogenes* var. *aureus* and *S. typhosa* upon contact within 10 seconds at either pH 2.2, 3.0, 4.0, 5.0, 6.0, 7.0 or 8.0.

(C) In another series the conditions of the preceding test were identical, except for the use of 70 ml. of buffer solution, instead of 60 ml.

Findings

In all instances, *S. typhosa* was killed at 37° C. upon contact within 10 seconds at pH values from 2.2 to 8.0. On the other hand, *Micrococcus pyogenes* var. *aureus* was killed at 37° C. upon contact (10 seconds) only in the pH range of 2.2 to 4.0.

(D) A series as above was conducted using 65 ml. of the buffer solutions, in order to obtain an end-point more critical than that obtained with the 60 ml. or 70 ml. volumes of buffer solution.

Findings

In all instances with 25 mg. of free iodine contained in one Heliogen tablet, *S. typhosa* was killed at 37° C. upon contact at pH values from 2.2 to 8.0. *S. pyogenes* var. *aureaus* was killed upon contact (10 seconds) in the pH range of 2.2 to 5.0; required 20 seconds for killing at pH 6.0, 30 seconds for killing at pH 7.0 and 1 minute for killing at pH 8.0.

II. The Bactericidal Efficiency of Heliogen by the F. D. A. Phenol Coefficient Method

(A) Dilutions of Heliogen tablets were prepared in distilled water and tested by the F. D. A. Phenol Coefficient Technic employing *M. pyogenes* var. *aureus* #209 and *Salmonella typhosa* Hopkins at both 20° C., and 37° C. (2).

Findings

The concentrations of Heliogen solution killing the test organisms in 10 but not in 5 minutes were as follows:

One Heliogen tablet dissolved in 300 ml. distilled water killed *M. pyogenes* var. *aureus* #209 at 20° C. One Heliogen tablet dissolved in 350 ml. distilled water killed *Salmonella typhosa* Hopkins at 20° C. One Heliogen tablet dissolved in 350 ml. distilled water killed *M. pyogenes* var. *aureus* #209 at 37° C., and one Heliogen tablet dissolved in 400 ml. distilled water killed *Salmonella typhosa* Hopkins at 37° C.

(B) The F. D. A. Phenol Coefficient Technic was repeated at both 20° C. and 37° C., but additional 4 mm. loop transplants were made at intervals of 10, 20 and 30 seconds and at 1, 2, 3 and 4 minutes employing *M. pyogenes* var. *aureus* and *Salmonella typhosa.*

Findings

At 20° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by a solution of Heliogen prepared by dissolving one Heliogen tablet in 275 ml. distilled water; in one minute by 1 tablet in 280 ml.

distilled water; in 4 minutes by 1 tablet in 290 ml.; in 5 minutes by 1 tablet in 300 ml. of distilled water.

At 20° C., *Salmonella typhosa* Hopkins was killed in 10 seconds by a solution of Heliogen prepared by dissolving one Heliogen tablet in 310 ml. distilled water; in 20 seconds by 1 tablet in 315 ml.; in 5 minutes by 1 tablet in 340 ml.; and in 10 minutes by 1 tablet in 350 ml. of distilled water.

At 37° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by a solution of Heliogen prepared by dissolving one Heliogen tablet in 255 ml. distilled water; in 20 seconds by 1 tablet in 265 ml.; in 1 minute by 1 tablet in 295 ml.; in 2 minutes by 1 tablet in 310 ml.; in 3 minutes by 1 tablet in 330 ml.; in 4 minutes by 1 tablet in 340 ml.; in 5 minutes by 1 tablet in 345 ml.; and in 10 minutes by 1 tablet in 350 ml. distilled water.

At 37° C., *Salmonella typhosa* Hopkins was killed in 10 seconds by a solution of Heliogen prepared by dissolving one Heliogen tablet in 350 ml. distilled water; in 1 minute by 1 tablet in 355 ml.; in 2 minutes by 1 tablet in 370 ml.; in 3 minutes by 1 tablet in 380 ml.; in 5 minutes by 1 tablet in 390 ml.; and in 10 minutes by 1 tablet in 400 ml. distilled water.

(C) *Phenol Coefficient Technic With Serum*—The preceding experiments II (A) and (B) were repeated in the presence of 5% and 10% human blood serum.

Findings

In the presence of 5% human serum the results were as follows:

At 20° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by Heliogen Solution (1 tablet in 80 ml. distilled water containing 5% human serum); in 20 seconds by 1 tablet in 90 ml.; in 1 minute by 1 tablet in 95 ml.; in 2 minutes by 1 tablet in 110 ml.; in 5 minutes by 1 tablet in 115 ml.; and in 10 minutes by 1 tablet in 125 ml.

At 20° C., *S. typhosa* Hopkins was killed by Heliogen Solution (1 tablet in 85 ml.) within 10 seconds; in 1 minute by 1 tablet in 105 ml.; in 3 minutes by 1 tablet in 115 ml. and in 10 minutes by 1 tablet in 130 ml.

At 37° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by 1 tablet in 100 ml.; in 1 minute by 1 tablet in 115 ml.; in 2

minutes by 1 tablet in 125 ml.; in 3 minutes by 1 tablet in 130 ml.; and in 10 minutes by one tablet in 140 ml.

At 37° C., *S. typhosa* Hopkins was killed in 10 seconds by 1 tablet in 100 ml.; in 20 seconds by 1 tablet in 110 ml.; in 1 minute by 1 tablet in 125 ml.; in 5 minutes by 1 tablet in 140 ml.; and in 10 minutes by 1 tablet in 150 ml.

In the presence of 10% human serum the results were as follows:

At 20° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by 1 tablet dissolved in 40 ml.; in 2 minutes by 1 tablet in 60 ml.; in 10 minutes by 1 tablet in 100 ml.; and in 15 minutes by 1 tablet in 105 ml.

At 20° C., *S. typhosa* Hopkins was killed in 10 seconds by 1 tablet in 60 ml.; in 1 minute by 1 tablet in 75 ml.; in 5 minutes by 1 tablet in 100 ml.; in 10 minutes by 1 tablet in 110 ml.; and in 15 minutes by 1 tablet in 115 ml.

At 37° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by 1 tablet in 60 ml.; in 1 minute by 1 tablet in 75 ml.; in 5 minutes by 1 tablet in 95 ml.; and in 10 minutes by 1 tablet in 120 ml.

At 37° C., *S. typhosa* Hopkins was killed in 10 seconds by 1 tablet in 70 ml.; in 1 minute by 1 tablet in 80 ml.; in 5 minutes by 1 tablet in 95 ml.; in 10 minutes by 1 tablet in 120 ml.; and in 15 minutes by 1 tablet in 125 ml.

Summary and Conclusions

(1) A study was made: as to the pH findings of Heliogen tablets dissolved in distilled and in tap water at different temperatures and the antibacterial efficiency of the latter was determined at different pH values using the total "swirl" technic (1). In addition "the conventional 4 mm. loopful transfer" technic was used also with and without serum.

(2) The final pH of Heliogen solution, prepared by dissolving one Heliogen tablet in 60 ml. of water was 5.6 within 2 to 5 minutes after adding the tablet, whether distilled or tap water was employed. The pH reading of solutions prepared with distilled water was 4.5 initially and reached 5.6 at the end of 5 minutes at either 20° C., 37° C. or 50° C. When tap water was employed, the initial pH was 6.8 at 20° C.; and 5.1 at 37° C. and 50° C. In all instances at the end of 5 minutes, the pH was 5.6.

(3) Employing McIlvaine's buffer solution, one Heliogen tablet (liberating 25 mg. free iodine) was dissolved in 60 ml. of the latter at varying pH values (2.2, 3.0, 4.0, 5.0, 6.0, 7.0 and 8.0). This is the pH range apt to be found in practice. Such solutions killed at 37° C. within 10 seconds the organisms in 0.5 ml. inocula of 24 hour-old cultures of the test bacteria (*Micrococcus pyogenes* var. *aureus* #209 and *Salmonella typhosa* Hopkins) at the pH range of 2.2 to 8.0. *M. pyogenes* var. *aureus* is representative of the commonly found resistant vegetative forms of bacteria found in body tissues.

Findings are also presented using one Heliogen tablet dissolved in 65 ml. and 70 ml. McIlvaine's buffer solution (pH range 2.2 to 8.0).

(4) The F. D. A. Phenol Coefficient Technic using the conventional 4 mm. loopful transfer was performed with Heliogen tablets dissolved in water employing the same test bacteria at 20° C. and at 37° C.

One Heliogen tablet dissolved in 300 ml. distilled water killed *M. pyogenes* var. *aureus* at 20° C. in 10 but not in 5 minutes. One tablet dissolved in 350 ml. distilled water killed *S. typhosa* at 20° C. in 10 but not in 5 minutes. One tablet dissolved in 360 ml. distilled water killed *M. pyogenes* var. *aureus* at 37° C. in 10 but not in 5 minutes and one tablet dissolved in 400 ml. distilled water killed *S. typhosa* at 37° C. in 10 but not in 5 minutes.

(5) Additional 4 mm. loopful transfers were made at 10, 20, and 30 seconds and at 1, 2, 3 and 4 minutes employing the F. D. A. Phenol Coefficient Technic. The following were the findings:

At 20° C., *M. pyogenes* var. *aureus* #209 was killed in 10 seconds by one Heliogen tablet dissolved in 275 ml. distilled water and *S. typhosa* Hopkins was killed in 10 seconds by one Heliogen tablet dissolved in 310 ml. distilled water.

At 37° C. *M. pyogenes* var. *aureus* #209 was killed within 10 seconds by a solution of one Heliogen tablet dissolved in 255 ml. distilled water and *S. typhosa* Hopkins was killed in 10 seconds by 1 Heliogen tablet dissolved in 350 ml. distilled water. At both temperatures, findings are reported for other interval time periods.

(6) The modified phenol coefficient technic was repeated as under (5) in the presence of 5 per cent and 10 per cent human blood serum.

In the presence of 5% serum, Heliogen solution (1 tablet in 85 ml.) killed within 10 seconds *S. typhosa* at 20° C., at 37° C. the concentration was 1 tablet in 100 ml. *M. pyogenes* var. *aureus* was killed at 20° C. within 10 seconds by a concentration of 1 tablet in 80 ml. and at 37° C. by a solution of 1 tablet in 100 ml.

In the presence of 10% serum, Heliogen solution (1 tablet dissolved in 60 ml. distilled water) killed *S. typhosa* at 20° C. within 10 seconds and at 37° C. the concentration was 1 tablet in 70 ml. *M. pyogenes* var. *aureus* was killed at 20° C. within 10 seconds by a concentration of 1 tablet in 40 ml. and at 37° C. by a solution of 1 tablet in 60 ml. Findings are reported for other time intervals at both temperatures.

(7) It is apparent from these *in vitro* studies that Heliogen tablets dissolved in water will yield solutions which are bactericidal against the commonly found vegetative forms of bacteria apt to be encountered in body tissues, the oral cavity, vaginal tract, etc. and at varying pH ranges and temperatures either in the presence or absence of blood serum.

REFERENCES

(1) Gershenfeld, L., and Witlin, B., 1953, The Bactericidal Efficiency of Heliogen. *Amer. J. Pharm. 125:*129.

(2) Ruehle, G. R. A., and Brewer, G. M., 1931, United States Food and Drug Administration Methods of Testing Antiseptics and Disinfectants. U. S. Dept. of Agriculture Circular No. 198.

(3) Britton, H. T. S., 1929, Hydrogen Ions, p. 180, New York, D. Van Nostrand Co.

PHARMACY'S CURRENT ECONOMIC PROBLEMS *

By J. N. McDonnell **

IT is in the best interests of the profession and industry for Pharmacy to settle intramurally its economic differences. It should never air them before the general public or the allied professions. Pharmacy's interest and welfare is not only that of the retail or prescription pharmacist, but as well that of the hospital dispenser, the wholesale druggist, the manufacturing pharmacist, the pharmaceutical educator and the regulator, not of any one alone. Each of these must understand that he is but one integral part of Pharmacy. Each is dependent upon the others. They in turn are dependent upon him.

The conflicting economic interests of the several professional and distributive groups within Pharmacy are understandable and inevitable. However because the interest and problems of one group, within Pharmacy naturally appear paramount to that group, they only serve to aggravate further the over-all problem of the profession and industry. The natural impulse of one segment of the profession and industry to profit at the expense of the others must be foregone. No one phase of Pharmacy can attain successfully its objectives or ultimately benefit at the expense or the detriment of the others. What benefits one benefits all of Pharmacy.

When this Trade Relations Committee was appointed it was charged with a definite objective. It was instructed to point out points of conflict between the several groups within Pharmacy, and if possible to attempt to resolve them. It was asked to harmonize their relationships wherever possible.

To facilitate this program, this committee recommends that its membership be expanded to include representatives of the wholesale distributive, hospital pharmacist and educational members of the Pennsylvania Pharmaceutical Association, in addition to certain manufacturing and retail members. Thus it should more clearly represent the wide interests of the Association and be equipped to deal with the trade and professional problems of the profession and industry of the Commonwealth.

---

* Adapted from the Report by Dr. John N. McDonnell, Chairman, Committee on Trade Relations of the Pennsylvania Pharmaceutical Association, at its Seventy-Sixth Annual Meeting, Hotel Ambassador, Atlantic City, New Jersey, July 20, 1953.

** Vice-President in charge of sales, Schering Corporation.

Intra-Industry Problems

The committee has been concerned with a number of intra-industry problems. Included among these were the subjects of trade discounts, retail gross margins, hospital pricing, physicians' supplies, "fill-first" and introductory packages, product duplication, "substitution" and "counterfeiting," specialty pricing and labelling, standardized information and retail and wholesale "Fair Trade." Foremost among these the currently vital problems of "Fair Trade."

Retail Fair Trade

The enactment of the amended enabling Act was unexpected. It provided the profession and the industry an opportunity to reevaluate their respective positions under the "Fair Trade Acts" of the several States.

Most pharmaceutical manufacturers recognize that the welfare of the independent retailer is important to them. This cannot be said of certain manufacturers of dentifrices, sundry and proprietary items, infant foods and cosmetics. Let's recognize however, that where the latter products have some volume of sales through supermarkets, variety stores and department stores, their manufacturers must take into consideration the marketing policies and technics and interests of these outlets. Just because pharmacists sell some of these items, they cannot expect favored consideration if their volume is but a small part of the total sale of those products.

Food chains and super-markets, with their "rack jobbers," are taking an ever larger place in the distribution of these products. The woman shopper visits the grocery store more often than her pharmacy despite what may be stated by some experts to the contrary. The supermarket operator welcomes her, and is ready to sell her what she wants to buy. He is accustomed to a profit of but 3 to 8 per cent on his regular food items so he cannot be blamed too much if he welcomes the 15 to 35 per cent profit return on proprietaries, even those which are not "Fair Traded".

Surveys show that more and more of these super-market, department and variety stores are adding drug departments. The pharmacist faced with this new competition cannot expect to rely upon legislation to prevent it or to force it out of business. By his sale of extraneous non-pharmaceutical merchandise the retail druggist

brought this situation upon himself. He should not be so foolish as to attempt to retaliate by refusing to display the usually-popular brands of merchandise sold in those outlets, even when they are not "Fair Traded." He is simply cutting his own throat economically by so doing. He is failing to properly serve his patrons and he is losing his competitive battle by losing sales when he loses customers who will go where they can get exactly what they want.

Contrary to popular pharmaceutical belief many pharmacists have found that they can compete successfully on a price basis on the popular items. They can fight the patent medicine stores, "pine boards" and super-markets, and by emphasizing their individuality and their service, and by giving fair prices, they can hold the business of their neighborhood. Naturally, they have to watch carefully and rigidly control their service costs, such as for delivery, charge accounts, etc. These are costly services which are *not* expected of their grocery and super-market competitor.

It is a widely held but dangerous economic fallacy, that *every* sale in a drug store must be made at or above the often-quoted "magic" 33 1/3% gross profit figure in order to cover the cost of doing business and show a profit in an average retail pharmacy. To expect to gain such a gross profit return on every item sold is a practical route to eventual business suicide. Many pharmacists fail to recognize that this "average" is a composite of many sales at higher gross levels, as well as many sales at lower gross levels. "The Lilly Digest", and innumerable other accepted and sound studies, have shown this to be a fact. The recent study of drug store handling costs, sponsored by the National Association of Retail Druggists, and as reported in "The Pennsylvania Pharmacist" (34:4, July 1953), revealed that most proprietary products, yielding gross profit margins of from 31.3 to 37.3 per cent, produced net profits averaging 10.5 per cent. Some high volume groups yielded as much as 26.5 per cent net profit.

Bear in mind that the median net profit percentages for all departments in the "N. A. R. D. Survey" stores were influenced by such relatively costly and low profit fields, as the tobacco and food departments. Where prescription volumes are low the costs of the dispensing laboratories also were an influence. Nevertheless, the *average* overall gross margin reported by the "N. A. R. D. Survey" is 34.9 per cent, with a net profit at 4.8 per cent.

Retail Profit Margins

Competition and long standing trade practices render difficult the adoption of uniform trade discount schedules in proprietary and drug sundry fields. Any unified system of uniform discounts is almost impossible.

In the proprietary drug field the "optimum retailer discount" is held to be 33 1/3 per cent. Many products are "Fair Traded" at this level. This is designed to protect the franchise of the manufacturer in his trade mark, and to insure retailer interest and cooperation. For various reasons, chiefly because of competition some proprietary drug manufacturers offer consumer selling prices which yield lesser discounts to the retailer. Unless the manufacturer's promotional efforts bring resultant sales volume for these products, sufficient to warrant the lower gross return based on volume turnover, the retailer is justified in refusing to give support to those products. When sales volumes are static but costs of doing business increase, percentage and dollar returns as net profit are proportionately lessened. Pharmaceutical manufacturers, wholesale druggists and prescription pharmacists alike face this problem today.

Some proprietary manufacturers recently have improved their profit return by increasing the net wholesale and drug list prices for their products without comparable increases in consumer list prices, and the latter is excused on the basis of competitive pressure. This practice only invites trouble.

Whenever increasing manufacturing and material costs require increases in a manufacturer's selling price for a product, comparable increases in drug list prices, *and* in consumer list prices, should be established.

Standardization of the retail discount on cosmetic products at 40 per cent or more, and on sundries and hospital and sick-room supplies at 50 per cent, has been fairly well accomplished. This Committee recommends that manufacturers in these fields in the future adopt schedules based on these discounts. Where necessary upward revision of existing sub-standard systems is also recommended to return a fair net profit to the distributor.

Prescription Specialty Pricing

The legality of "Fair Trade" minimum resale prices when applied to dispensed prescription specialties is in dispute. Customarily,

prescription pharmacists price an easily identified specialty or one frequently sold "over the counter" at the suggested minimum resale price. Others add a compounding or defensible professional fee or ignore minimum resale prices altogether.

There is no order in the catalog pricing of specialty pharmaceuticals. Some manufacturers show a recommended "consumer list", a "Fair Trade minimum resale" a "druggist list price" (presumably that which he pays to his wholesaler for the item), or a "net price". Any or all of them may be affected by a multitude of varied discounts, known only to the manufacturer and seldom to the wholesaler or retailer. Complicated or multiple retail discount structures, where successive graduated discounts are quoted, but which in total amount to 40% or 33 1/3%, are not in the interest of and only serve to confuse the retail pharmacist. "Split discount" retail structures, where varying *retail* discounts are quoted depending upon type or competitive nature of the product or on its profitability to the manufacturer, also are undesirable. There has been, however, an honest effort to bring order out of this price list and discount chaos.

Many leading manufacturers of pharmaceutical specialties have adopted catalog price schedules based on suggested consumer list prices. These provide for a "uniform 40% discount" accruing to the retail pharmacist.

In most cases, the minimum resale prices established under "Fair Trade Laws", in those States where the latter are in effect, are 10 per cent under these consumer list prices. However, some manufacturers provide only drug list prices in their catalogs and instruct the retailer to add 50 per cent to derive from these drug list prices the suggested selling price or minimum resale price under "Fair Trade." In either case the gross margin actually returned to the retail pharmacist is 33 1/3 per cent, or the time-honored "50 per cent mark-up on cost".

These procedures were developed nearly two decades ago. It was at that time that the presently popular "consumer list less 40 per cent discount price" schedules for the retailer's cost from his wholesaler, and the "consumer list price less 10 per cent discount" or so-called "Fair Trade" prices were first adopted. These were designed solely to permit the existing schedules to be accommodated to the new "Fair Trade" and retail price structures.

Price Increases

The pharmaceutical industry and profession has been practically alone in *not* increasing the selling prices of its products to consumers. Despite the increases in cost of living, clothing, food, rent, and even in many fields of lesser importance to the consumer, the costs of medicines and drugs have remained relatively stable. Manufacturing wholesale and prescription pharmacists have been reluctant to increase prices. This has been in part due to the blind and almost ruthless competition which has existed at all levels. It has also been due to the industry's reluctance to bring any increase in the *cost* of *living*. However, at long last, rising operating costs now dictate the need for some practical approach to this problem of costs and prices by each level in the industry. The manufacturer, the wholesaler and the distributor or dispenser must cease absorbing rising labor and material costs in diminishing gross profits. The former groups can solve their problem in part by accordingly lifting wholesale list prices, but these do not always insure greater return to the retail pharmacists. Consequently, the adoption of the "consumer list price less 40% discount" type of catalog and discount structure is now recommended for prescription specialty products. Your Committee now recommends the establishment of "Fair Trade" minimum resale prices at the exact consumer list price level, rather than at 10% less than consumer list prices.

Wholesale "Fair Trade"

In many markets, competition has forced the wholesale druggist to extend to his retail and hospital customers a considerable portion of that discount on pharmaceutical products which normally is accorded by manufacturers to wholesalers in return for their distributive service. Consequently, wholesale net profits have been dangerously and inequitably reduced.

To a considerable extent, minimum prices at which wholesalers are to sell to their customers are being established by pharmaceutical manufacturers under *wholesale* "Fair Trade" contracts, to protect trade-marked merchandise from destructive competition at this level. Retail and hospital pharmacists who have been accustomed to this common practice by wholesalers of giving "10% off" on many prescription and proprietary lines, must be aware that the increasing adoption of wholesale "Fair Trade" prices will materially affect their gross profit margin.

Hospital Pricing

The importance of community health service rendered by hospitals is recognized by the pharmaceutical profession and industry as well as by the public and government.

Less than two-thirds of all hospitals maintain pharmacies under registered pharmaceutical supervision. Some hospitals depend upon nearby prescription pharmacies for needed pharmaceuticals and related products. The remainder relegate dispensing to interns, nurses, and other non-pharmaceutical persons. Wherever an institution's economy permits, local pharmacists should encourage hospital administrators to retain full-time pharmaceutical supervision.

Many hospitals are educational or research institutions. In general, because of the rising operating costs, limited income, and charity services rendered by hospitals, pharmaceutical manufacturers frequently extend to hospitals special lower price schedules. In some cases, however, the differential between these hospital price schedules and those extended to retail pharmacists is great.

Hospital pharmacies generally do not operate under the jurisdiction of the State Board of Pharmacy, nor are they subject to local and state mercantile laws. Many hospitals depend upon state and city aid and upon private charity and local business sources for financial support. Consequently, hospital administrators and hospital pharmacists should be careful in their efforts to be of greater service to the public. They should restrict the amount and the extent to which their outpatient departments provide pharmaceuticals and engage in competition with community retail pharmacies. The prices which they charge should be somewhat comparable to local prescription prices if within the ability of the patients to pay. Pharmaceutical manufacturers as well should maintain price schedules for hospital and prescription pharmacies in some reasonable proportion to each other.

Substitution

When a physician prescribes a medication, the pharmacist must assume that the medicament so prescribed is that which is specifically desired for the patient. It is presumed that it is also properly prescribed and indicated. If it is not properly prescribed or safe for the patient, it is the pharmacist's legal responsibility to contact the physician, or if not able to do so, to refuse to dispense it, or to change the prescription. He is not legally or professionally permitted to

substitute another drug under any other circumstance. Permissible substitution is the dispensing of an unbranded drug or another brand of a drug for a prescribed brand of an identical drug, after the prescribing physician's approval of the change has been obtained.

It is conceded that an "official" or otherwise standardized or recognized medicament is presumed of identical standard and quality, regardless of origin. Should a physician prescribe such a medicament without specifying brand, the pharmacist is properly within his province to dispense that material which he has in stock, regardless of brand or origin provided it is chemically or pharmaceutically identical. However, several national and nearly a score of state pharmaceutical and other groups have stated the dictum that where a physician specifies a brand of such medicament, or branded trade name for same, it is deemed "substitution" and so unprofessional for the pharmacist to dispense any material of *other* origin or brand. In some states this is illegal, for California, Oregon, and other states have now interpreted it in this fashion and have amended their Pharmacy Acts accordingly. It may be that in so doing, they have weakened the constitutionality of their Acts. The "brand" substitution amendment might be controversial were it to be applied under certain conditions where the substance substituted is chemically or pharmaceutically identical.

Certain types of "substitution" of pharmaceutical products, however, are not only definitely unprofessional, but are as well criminal. Where a pharmacist dispenses for a prescribed drug, another brand of the drug identical in size, shape, color, odor and/or taste, or a chemically or pharmaceutically different drug identical in size, shape, color, odor and/or taste, he is guilty of "counterfeiting." Where a pharmacist dispenses for a prescribed brand of a drug another drug which is chemically or pharmaceutically different, without approval of the physician, he is guilty of "criminal substitution." No pharmacist can condone or defend these actions.

Duplication of Products

According to one authority, 314 new pharmaceutical products were introduced in the market in 1952. Of this total, 35 were new original products such as "Banthine," "Dormison" and "Bicillin." Seventy-seven preparations contained but a single ingredient, one which had previously been marketed by other manufacturers. The

remaining 202 were "prescription type" preparations containing two or more ingredients.

Prescription and hospital pharmacists complain bitterly because of the introduction of "duplicate" products. The introduction of these preparations requires in many instances the stocking of three, four or more "brands" or trade-marked preparations, of identical formulation. The pharmacist considers it unfair to him to have to stock a number of brands of, let us say, therapeutic vitamin capsules of identical formula or as many brands of combined sulfonamide tablets, only to receive a prescription calling for still another new and unanticipated brand of one of these identical products.

This is an understandable complaint. However, let's look at another side of the picture. Nearly three-quarters of all prescriptions written today are for products which were not on the market ten years ago. The dollar volume of the average pharmacy has increased more than three times in the same period. The percentage of total drug store dollar sales derived from prescriptions has risen from 11% to more than 22% in the same period. As a result, the prescription department is becoming a more important and an increasingly active factor in support of the smaller neighborhood drug stores. The "professional" prescription pharmacy, once a comparative rarity, is now also to be found in almost any neighborhood where population and physician concentration may warrant.

It is unprofessional and even illegal for the pharmacist to dispense of his own accord other than that which the doctor has prescribed, unless the safety of the patient is endangered. Nevertheless, he frequently defends what is termed "substitution" as the natural economic result of "product duplication." Actually, there is no relationship between "product duplication" and "substitution."

It is true that physicians and pharmacists can agree locally that whenever a brand specified is not in stock, an exactly equivalent product under another brand can be dispensed. It is true that this may lead to abuse. It is a controversial subject among pharmacists and generally produces opposition from manufacturers.

A manufacturer who really originates a product, and may not yet have regained his research and introductory investment, does not welcome duplication. However, it is true that research today is in a large measure duplicated. After the appearance of a novel product, the later marketing of two or three similar products by promotionally powerful manufacturers, based on their own almost coincidental or

even collaborative developmental efforts, results in "duplication," as well as it results from their understandable desire to provide to all physicians complete lines of up-to-date medication under their "brand."

Many pharmacists attempt to meet the problem of "duplication" by stocking the first two or three brands of a product which are marketed. Others later decide to adopt another brand, of a more popular manufacturer, when the latter reaches a volume sufficient to warrant replacement of one of the originally-selected group.

Pharmacists believe that new products and "duplications" contribute to rising inventory costs. However, reliable studies have shown that there has been surprisingly little increase in the number of dollars tied up in the average pharmacy's inventory. If pharmacists would clear out "dead-end" and "obsolete" items regularly, they would discover that their return on actual "live dollar investment" would rise rapidly. Most increases in dollar inventory in recent years can be attributable to uneconomical expansion of "sundry" lines.

The manufacturer's viewpoint on "duplication" is based on the principle of free enterprise. This is assumed to allow to the manufacturer the fabrication and promotion of anything that can eventually be sold. As-yet-unpatented or unpatentable "new products" are to an increasing extent made available by their developers to several other manufacturers, through licensing or agreement. When a "new product" thus becomes available and looks promising, the larger manufacturers wish to "complete their lines" and provide the new product to those physicians who in general have been convinced to prefer their brand. Smaller manufacturers who are usually reluctant to market exact duplicates, frequently develop specialties which are based upon the original formula or product.

However, whenever a product enters the line of the relatively unknown, "long profit," but unpromoted slow-moving or "private label" brands, then "duplication" has really occurred. For the prescription pharmacist, the possibility of "inventory trouble" is at hand. Pharmacists who stock the latter products at that point, in the hope of a greater gross profit or sales "under their own label," can hardly complain of "duplication."

Pharmacists frequently look for some arbitrary industrial or legislative limitation of the number of specialties or brands of a product. This is out of the question. They should recognize that the natural consequence of such regimentation might well result in ex-

tension of such actions to a limitation on research, or products, and even to the number of retail practitioners and pharmacies in any or all communities.

Introductory Packaging

In order to ease the presumed economic burden of the many new products, routine introduction of small unit packages of from 10 to 30 tablets, or of a 2 or 3-oz. bottle of a new product, has been advocated.

Most new tablet or capsule products are regularly packed in containers of 100 units. Sometimes, however, the only package available is one which represents an investment of several times the return from the first (and only) prescription. The pharmacist in many cases is "stuck with the remainder" and his complaint is understandable. Where the drug list price of the 100 or point packing exceeds $3.00, most pharmaceutical manufacturers now introduce a bottle of 30 or 40 units or of a fraction of a pint. As the product becomes more popular, the introductory packing is usually, or at least can be, discontinued.

Product Control

Where new products are stocked in anticipation of demand, the pharmacist should attach a small detachable sticker to each new product, marking thereon the date, source of the product, and cost. A few moments each week devoted to a different stock section will reveal those products for which a demand never materializes. After six months or a year, if they have remained unopened and have not yielded their first prescriptions, they should be returned or salvaged. If the pharmacist limits his purchases of new products to those which can be returned in a reasonable period to either the manufacturer or wholesaler, the problem is simplified.

What to do with the bottles of medicine wherefrom one prescription has been dispensed, and the remainder rests on the shelf, is an as-yet-unsolvable problem.

Returned Goods

Manufacturers' or wholesalers' excessively liberal returned goods policies virtually amount to guaranteeing retailer sales. They have been extended and abused in recent years. Until recently, unopened

packages have been almost universally returnable, because manufacturers' policies under "Fair Trade" are designed to control "close-out" sales and cut prices.

The privilege of returning unopened merchandise, together with the industry practice of protecting wholesale and retail floor stocks by credits in the event of price reduction, are phenomena almost individual to the pharmaceutical industry. In the future, in an attempt to eliminate current abuses and to reduce handling costs and losses (which have increased materially) prescription and hospital pharmacists can expect that manufacturers and wholesalers will naturally restrict the practice of accepting "returned goods."

Manufacturers and wholesalers must henceforth refuse to continue to carry the risk of doing business at lower distributive levels. If retailers insist on unwise or excessive buying, without full knowledge of their terms of purchase, they may soon discover that they cannot sell, salvage or return much of their unwisely-purchased and unsalable merchandise.

It is to be expected that wholesalers henceforth will accept for credit only that merchandise which is identified as having been purchased from them by the prescription or hospital pharmacist. In turn they probably will expect the manufacturer to accept the merchandise and to reimburse them for their handling costs. Manufacturers will also be reluctant to accept any "returned goods" from wholesale, retail and hospital pharmacies. They may be expected to limit to a greater extent the credit or the actual valuation of the merchandise returned, after allowance is made for the cost of handling and repackaging.

Price Reduction Credits

The pharmaceutical industry's policy in the event of a price reduction of protecting "floor stocks" by extending credit is not general to other industries. Strangely enough, drug distributors have never been expected to consider seriously the *payment* to the *manufacturer* of a differential on their floor stocks, in the event of a price *increase*.

This practice jeopardizes the economic stability of the pharmaceutical manufacturer. His sales are in jeopardy as a result of reductions and subsequent rebate at any time.

As a result, to a considerable extent recently in the case of price reductions, the extension of cash credit by manufacturers to wholesale druggists and to hospital and prescription pharmacies has been

supplanted by merchandise credits. It is inevitable that decreasing profit margins among pharmaceutical manufacturers will result in the future in the adoption of the practice of "deferred date" price reductions, with due notice to distributors to dispose of existing stocks, and the ultimate elimination of merchandise or cash credits. As in most industries, and to an increasing extent in cosmetic and pharmaceutical sundry fields, sales to wholesale druggists and to retail and hospital pharmacies will be final, unaffected by subsequent fluctuations in prices.

These changes in trade practices will doubtless have their influence upon the buying habits of wholesale druggists and retail and hospital distributors. The latter will show greater reluctance to purchase new or unproven products and unknown merchandise lines.

The economic risk at distributor levels will be materially increased. It may well result in decreased retailer inventories, lowered gross margins of profit for manufacturer, wholesaler and retailer, and a probable increase in retail business failures.

Specialty Labeling

Until passage of the Durham-Humphrey Amendment to the Federal Food, Drug and Cosmetic Act of 1938, the labeling of pharmaceutical specialties was confusing. Pharmacists had difficulty in determining from the labels of many products whether they could or could not be sold "over-the-counter" safely and legally.

By August of this year, however, all pharmaceutical labeling must conform to set patterns. *Every* product must carry a statement of ingredients, a listing of principal indications and the average dosage. The *only* difference between "prescription only" products and those which may be sold "over-the-counter" will be the inclusion of the legend "Caution: Federal law prohibits dispensing without prescription."

The pharmacist must look for this sentence as the only way to determine the difference. Consequently, the busy prescription pharmacist will find it very difficult to differentiate between them.

Manufacturers' labeling varies in design from product to product and from company to company. It is recommended therefore that manufacturers adopt and standardize upon some symbol, to be placed prominently on the label, to indicate those which may be dispensed on "prescription only." Your Committee recommends the following symbol:



Manufacturers and publishers are requested also to insert the symbol ℞ following the listing of every "prescription legend" product in literature, advertising, catalogs, price lists and "price books" where pharmaceutical packaging is described.

Standardized Information

The retail pharmacist's role in the distribution of pharmaceutical specialties is recognized by the medical profession. To an increasing extent physicians are calling upon their prescription and hospital pharmacists for information on the composition, indications, contraindications, pharmacology, toxicity, dosage and packaging of drugs. The pharmacist's legal responsibility over the dispensed prescription renders imperative the provision by manufacturers of adequate information concerning their products.

Manufacturers should provide routinely to every pharmacist leaflets or brochures on each new product immediately prior to its initial promotion to the medical profession. "Package inserts" for the information of physicians, and informative file cards, usually provide adequate information in a convenient and accessible form. Every prescription and hospital pharmacist should establish and keep up to date such a file. Professional service representatives of pharmaceutical manufacturers provide an additional means whereby such information can be obtained and assembled.

Pricing Specialties

The legality of "Fair Trade" minimum resale prices is controversial when applied to prescription specialties which bear the "prescription only" legend and are dispensed without trade mark identification. If no competition exists, the law provides that a product cannot be "Fair Traded." If two brands of an identical product are marketed, each or both can be given minimum resale prices, not necessarily identical. The Pennsylvania Pharmaceutical Association through its appropriate Committee and Counsel, should obtain an

interpretation of the law with respect to the application of minimum resale prices when a product is dispensed on prescription.

Pricing Physicians' Purchases

Practicing physicians always have been accorded special discounts by pharmacists on purchases of pharmaceuticals and supplies for their personal use or for dispensing. Pharmacists offer varying discounts to some, but not to all physicians. Their intent apparently is to promote a better relationship with the physician and to influence the direction of his prescriptions, or is based on the strictly competitive problem of supply.

Some pharmacists base physicians' prices on a 25% discount from catalog list price, others at 15% above druggist's list price. Other pharmacists turn over the merchandise to physicians at cost and without profit. The latter situation has developed especially in those localities where for competitive reasons a pharmacist sets out to beat all competition or where, by reason of sales volume or promotional cooperation, he receives "direct buying privileges" at a special discount. These enable him to sell to physicians at druggist's list price and still show a profit, even though his smaller competitors must then sell at cost in order to compete.

When physicians make purchases in other retail establishments, they do not receive special consideration. Pharmacy is the professional equal of Medicine. Therefore, it is to the best interests of both professions to rationalize this situation and to establish a standard procedure. The medical profession doesn't expect the pharmacist to lose money on their purchases. Pharmaceutical specialties intended for dispensing should be sold to physicians at 15% over druggist's list price, or 25% off catalog list price. All other merchandise should be sold to physicians at minimum resale prices established under Fair Trade.

PHARMACIST'S QUEST *

By Louis H. Pink **

TONIGHT you enter into a new life. One phase of that life is your relation to your family, friends, and neighbors, your personal enjoyments and problems. The other phase is your approach to your chosen occupation, to scientific achievement, and the quality of your service to the public. On both the personal and the professional sides it is what you *give* to life that is important. As Albert Schweitzer puts it, we must achieve "a zest and reverence for life."

When Georges Clemenceau, that outstanding Frenchman who once dominated the European scene, now dominated by no one, came to this country everyone thought that he, like most official visitors from other lands, wanted our American dollars. But money, he announced, would not satisfy him. "I want your heart and all the powers of reason and feeling you may be endowed with," he said. That is what your family, your friends, your profession, and your country want and need from you. For never was this nation more disturbed, never did graduates face a more difficult world. Never was the need so great for clear and honest thinking and for courageous citizens.

You are part and parcel of the great profession of medicine—medicine which should be preventive and constructive as well as curative, which should reflect every scientific advance without the loss of human sympathy and insight. A truly successful professional career will require devotion and human affection as well as energy, application, study and research.

It is almost impossible to appreciate the vast strides which medicine has made in the last fifty years. It was not so long ago—no further back than colonial days in America—that devils were thought to enter the body of a sick man, and incantations, prayers, and charms were invoked to drive them out. Powders made from snakes and reptiles and horns of unicorns were dispensed by druggists

* Commencement Address, Brooklyn College of Pharmacy of Long Island University, June 9, 1953.

** Former President and Chairman of the Board, Associated Hospital Service; former Superintendent of Insurance of New York State.

in the late middle ages at high prices. Only the very rich could indulge in such superlative—and no doubt effective—remedies.

In today's age of science many dread plagues and diseases have been driven out of the lives of the economically advanced people of the world, and the accomplishments of the World Health Organization, the Technical Assistance Program under the United Nations, and under our own Point Four, read like fairy tales. But the backward areas of the world cannot be reclaimed through medical science alone. Economic improvement is basic and must be achieved before medical science can be permanently effective. It is only where poverty blunts, stifles, and demoralizes human life and happiness that malaria, tuberculosis, and the plagues still stalk the land and children die before they have had a chance to live. With all the scientific advancement of the last quarter of a century there is still much to be done in housing, in education, in distributing food, clothing, culture, and in bringing about the advancement of the medical arts.

In our country, where medicine is said to be farther advanced than anywhere in the world, we have not learned to live in peace with other peoples, respecting their cultures and their ways of life. Nor have we found the most effective way of distributing the good medical care which we so abundantly enjoy to many backward areas, or to our neighbors in the lower income groups who live in blighted areas and do not enjoy equality in the good things of life.

How can we spread more equitably the outstanding medical advantages which we enjoy, which in half a century have increased the span of life from 47 to 68 years of age? This great advance in human welfare brings with it serious problems. An older population is more subject to cancer, to diseases of the heart, to the degenerative diseases, and to mental ailments. These diseases of age cannot be conquered after they occur; they must be prevented from occurring in the earliest years. The answer lies in a better organized society and the systematic strengthening of the human body and the human mind.

A world of war and hate, of backward areas, poverty, poor housing, and lack of modern sanitation, is not conducive to the physical and mental improvement of the human race. We must improve economic conditions, spread culture, education, and human understanding. We must achieve a more effective distribution of medical care if the diseases of old age are to be mitigated. It is generally recommended that older people have interests and hobbies. According to one of our leading medical authorities, Dr. Russell L.

Cecil, they should also indulge in a few vices, including liquor, good food, and tobacco.

Your habits today, your care for your body and your mind, your hobbies and wide interests in life, will determine to a large extent your ability to live happily and usefully when you reach, as I have, the miscalled "age of retirement".

As pharmacists you are naturally interested in the miracle drugs which have now become indispensable. Is the state to provide them free, as it does in Britain and Australia, with the attendant abuse which accompanies free distribution? Or are we in the United States to find a broader highway under which expensive drugs and all medical care can be brought within the purchasing power of the great mass of the people?

Many in this country, including our former President, have advocated national health insurance as the most effective means of distributing medical care. No one can deny that there are real and important advantages in a compulsory system and to call it "socialistic" or "communistic" is of no avail. But it is equally true, and obvious to anyone who looks at Britain or at other nations where a compulsory system prevails, that what is gained in quantity is lost in quality. It is incumbent upon us who live in the wealthiest and most favored part of the world to devise a system of medical care which preserves quality while it assures quantity.

Opportunity to perfect our medical system lies before us now. We know that for a four-year period at least we shall be free from the threat of compulsory medicine. But we must recognize that this is only a temporary security which we enjoy—a breathing spell that may eventually be lost if we do not use these years to devise a plan which will so far excel compulsory medicine that National Health Insurance will never again be a pressing threat.

The best way out is clearly indicated by our experience. One of the amazing cooperative developments of the world is the spread of Blue Cross, Blue Shield, and other voluntary hospital and medical plans, and the protection provided by our insurance companies. No nation begins to be as well insured as the United States—perhaps because we have more to insure. This web of health insurance, most of it on the prepayment basis, is spreading so rapidly that only those segments of the population which cannot pay for it are now without reasonable protection. While there are still many gaps in its dis-

tribution, and serious lacks in the comprehensiveness of the coverage offered, the breadth and the quality of this protection is increasing day by day. Individuals, employers, and unions are doing much to provide broad medical care, yet there are many who cannot afford medical care of high quality and must depend upon charity or government aid. Also, our health insurance policies contain far too many exceptions, limitations and restrictions.

Our experience has shown us that while we do not need a compulsory government system, we do need federal grants-in-aid which will provide money to enrich our system of medical care and help to mend its deficiencies and defects. Grants-in-aid permit local operation and control, encourage experimentation and improvement, and continue the widespread citizen interest in health, medical education, and research. Our experience so far, not only in medical protection but in housing and other fields, indicates that grants-in-aid do not bring with them objectionable federal regimentation or control.

That comprehensive coverage and high quality of service which we rightly demand cannot come about unless there is real leadership on the part of physicians and surgeons, pharmacists, scientists, and hospitals. It is suicide for these groups to sit back and say that the present system is the best in the world, while they resist reasonable and helpful changes. Good as it is, American medicine and its distribution can be immensely better. The fruits of our revolutionary scientific progress have not yet been brought within the practical reach of the people as a whole.

We are all agreed that there are gaps in our system of distribution which must be plugged up. Instead of being continually on the defensive the medical profession of the United States should lead in disclosing these deficiencies and in devising remedies. There is an economic problem in the provision of good medicine as well as a scientific one and it exists for the doctor as well as for the patient.

Medical men are rarely suited to the business of selling their product to the public, nor have they the time or inclination for the job. There is a legitimate fear on the part of the practitioner that any socialization of medicine may affect his monetary rewards. But Blue Cross, Blue Shield, and the insurance companies have enlarged and enhanced the financial security of the medical profession. Any sound plan for distribution, even though it may involve some reasonable restriction on medical fees based upon the income of the patient,

will increase the doctor's income in the aggregate and will at the same time improve the health of the public.

Doctors also fear a loss of sovereignty, but is not this threat more fancied than real? The physician under any sound and acceptable system would be in entire control of all the medical aspects of each case and the use of the specialties would be entirely under his direction.

Plugging up the loopholes in our system is not enough. Often overlooked is the fact that good health, while to some extent dependent upon heredity, is largely due to the education in health and the personal effort and vigilance of the individual. We have no right to assume that National Health Insurance or Blue Cross or Blue Shield, or any other system of medicine will keep us in good health. It is imperative that we have financial protection against hospital and medical bills, but we cannot place responsibility for the individual's health upon any system, however good. If fat people would eat less the Blue Cross Plans would save millions of dollars a year! Hygiene and the maintenance of a healthy body and mind cannot be delegated. Health education, periodic checkups, preventive medicine, the attitude of the individual towards his life and his environment are all important in any health program.

You have come of age in a period of astounding scientific development, of medical advance heretofore undreamed of, a period in which chemistry and the laboratory have speeded up the treatment of many specific diseases and found new remedies for others. This is a day of excitement and fabulous promise for members of your profession.

But unfortunately this stimulating age which has made the centuries which have gone before seem same, has witnessed no comparable progress in the science of human relations or in the elimination of war from the face of the earth. Machinery we have in the United Nations, but it is not used as was intended. If the detractors of the United Nations are remembered at all, history will record them as harmful and of little vision. That is what has happened to those who, for reasons of political advantage or personal pique, killed Woodrow Wilson and crippled his League of Nations.

Worst of all, we in this great and powerful country, looked to for mutual aid and leadership by a distraught world, have become the most jittery of the nations. We are consumed by fear and intolerance to such an extent that our influence abroad is waning, and our fundamental personal privileges and the rights guaranteed by our Con-

stitution are in danger of subversive curtailment. Our universities and schools, most of our institutions both public and private, face the visitation of inquisitors. Even our churches are threatened. In Hitler's and Mussolini's regimes people were afraid to speak freely even before their families and their friends. Here no such situation has as yet come to pass, but there is a dangerous trend towards an acceptance of the "party line" of the interrogators. Increasing caution in expressing any opinion in public which may be the subject of gossip and distortion is the order of the day.

George F. Kennan, one of our foremost career diplomats, writing of the training of diplomats, points out the danger of this hysteria to our public service. He says:

> "All that is necessary is to release a spate of rumors and gossip and demands for investigation. There are always tongues willing and eager to take up this cry and carry it further; something of it is bound to stick in the public mind; and in the end, if the public servant in question is not discouraged and demoralized, a portion of the public will at any rate have lost confidence in him, and his usefulness to the country will have been thereby reduced. . . ."

Judge Learned Hand of the United States Circuit Court, writing in the *Bulletin of the American Association of University Professors* gives warning of our danger in these significant words:

> "I believe that that community is already in process of dissolution where each man begins to eye his neighbor as a possible enemy; where nonconformity with the accepted creed, political as well as religious, is a mark of disaffection; where denunciation, without specification or backing, takes the place of evidence; where orthodoxy chokes freedom of dissent; where faith in the eventual supremacy of reason has become so timid that we dare not enter our convictions in the open lists, to win or lose."

These two quotations are but samples of the many words of warning widely uttered not by radicals or men of ill will, but by the flower of our citizens.

I cannot advise you what to think in these perilous times. You must do your own thinking and stand upon your own two feet. I can only say that you owe it to your University which has given you

training and to this great country which has nurtured you to face the world with courage and with determination to exercise, as free and sovereign men, the rights given you by our Constitution.

My final appeal to you is not to accept the easy role and bow your heads to the storm. Our President is trying to prevent the spread of malicious ill will from high places and to protect us in the exercise of our inalienable rights and privileges.

Let us be tolerant of the sincere beliefs of others, so long as they do not seek to alter our form of government by force or violence.

Stand up manfully for your honest convictions whatever they are and take with you as you leave these halls and enter upon the duties of your profession and your obligations as citizens of the United States, these words of Edmund Burke: "The only thing necessary for the triumph of evil is for good men to do nothing."

SELECTED ABSTRACTS

A Comparison of Orally Administered Penicillins. Foltz, E. L., and Schimmel, N. H. *Antibiotics & Chemother. 3*:593 (1953). The absorption into the blood serum and the excretion of liquid oral preparations of procaine penicillin G as a suspension, potassium penicillin G as a buffered solution, and N,N′dibenzylethylenediamine dipenicillin G (DDP) as a suspension were studied on two groups of 6 healthy adult volunteers. The three preparations were given successively on separate test days to all of the volunteers who, thus, served as their own controls. The first group received a single dose while in the fasting state and the second group received a second dose in the non-fasting state six hours after the initial fasting dose.

The results from this study indicate that following doses of 300,000 units both potassium and procaine penicillins give higher peak serum concentrations during the first four hours following administration than did DDP. Total urinary recoveries over the first 6 hours following administration were likewise considerably lower with DDP. The serum levels at 6 and at 8 hours showed more of the volunteers to have indeterminable concentrations or no detectable antibiotic activity with DDP than with the other penicillins. It would, therefore, appear that DDP does not give more prolonged serum levels than other oral penicillin preparations.

The subjects in the fasting state showed higher serum levels one-half hour after the antibiotics were given than the same subjects in the non-fasting state one-half hour after administration. However, the repeat doses did not give any indication of a cumulative effect from DDP. The authors, therefore, concluded that, under the conditions of this study, there was no indication that N,N′dibenzylethylenediamine dipenicillin G was more effective than either of the other penicillins.

In Vitro Studies on Erythromycin and Carbomycin. Fusillo, M. H., Noyes, H. E., Pulaski, E. J., and Tom, J. Y. S. *Antibiotics & Chemother. 3*:581 (1953). *In vitro* studies on the spectrum of the two new antibiotics erythromycin and carbomycin were performed by the authors. They found that neither of the antibiotics may be placed in the group of broad spectrum antibiotics. The Gram-positive

streptococci and staphylococci were sensitive to erythromycin and carbomycin even though the strains were highly resistant to other major antibiotics. *Actinomyces israeli, Clostridia* sp. and *C. diphtheriae* were also sensitive to erythromycin and *D. pneumoniae* and *Clostridia* sp. were sensitive to carbomycin. A number of other organisms including the Gram-negative enteric bacilli, mycobacteria and a number of pathogenic fungi were resistant to erythromycin and, in those cases tested, to carbomycin. These two antibiotics seem to have a similar spectrum but it would appear that slightly more carbomycin by weight is required to give comparable results.

The authors found that by making serial transfers of staphylococci and streptococci in increasing concentrations of the antibiotics resistance could be induced against both erythromycin and carbomycin. However, it developed as a slow adaptive process rather than a single step selection.

Cross resistance studies showed that when *Streptococcus fecalis* was made resistant to penicillin or erythromycin no cross resistance between the antibiotics could be demonstrated. However, in cross resistance studied on erythromycin and carbomycin using *Staphylococcus aureus,* it was evident that a direct cross resistance between these two antibiotics does exist.

An Evaluation of the Hereditary Concept of Allergy. Ratner, B., and Silberman, D. E. *Trans. N. Y. Acad. Sci. 15:79* (1953). The authors discussed their own data and that of others accumulated in an effort to throw light on the hereditary concept of allergy. The general incidence of major allergic syndromes in the average population seems to be from 7 to 10 per cent. In an inquiry covering 15 years the authors carefully questioned 3,000 medical students, physicians and nurses. They found that the general incidence of allergic conditions was from 10 to 19 per cent. For comparison, they carefully questioned 250 allergic patients concerning a total of 6,244 relatives. Of this total 617, or 9.8 per cent, were allergic. They also analyzed the latter group by families. There was an average of 25 persons per family history. In about 40 per cent of the families, there was only one allergic member, the patient himself. An additional 25 per cent of the families had only one other relative who showed allergic characteristics. About 88 per cent of the

families had an allergic incidence of 2 to 20 per cent, an incidence corresponding to that found in the general population.

Evaluating this data and that quoted from other investigators, the authors concluded that there is not adequate evidence that the capacity to become sensitized is controlled by genetic influences. However, they pointed out that the frequency with which the hypersensitive state occurs in lower animals and in man makes it extremely difficult to dissociate acquired from genetic factors in its establishment. It is possible that the gene does play a part in the production of the allergic state, but the present evidence would not seem to justify concluding that it plays a primary role.

Stability of Procaine Penicillin G. Buckwalter, F. H., and Holleran, R. *Antibiotics & Chemother. 3*:578 (1953). Vials of procaine penicillin G in peanut oil or sesame oil and gelled with 2 per cent aluminum monostearate (PAO) were studied for stability. The product used was Flocillin "96".

Storage tests were conducted at elevated temperatures of 52-56 C., simulating tropical storage conditions, and at room temperature, 22-28 C. Eleven different batches of PAO were stored at room temperature for 47 to 50 months. All but 3 samples showed a loss in potency of less than 1 per cent. The greatest loss was 5.1 per cent. Samples from 20 different batches were stored at the elevated temperatures for from 7 to 19 months. Of these, 13 showed a loss of less than 1 per cent, the highest loss being 13.1 per cent in one sample after 12 months' storage.

Undisturbed vials were also examined for physical characteristics at intervals during the experimental period. It was found that the samples kept at room temperature showed a syneresis of about 10 per cent after 4 years. However, a homogeneous suspension was obtained in all cases after a 5-sec.-shake or less. The samples were creamy white in color and showed little change in viscosity after 4 years. The suspension could easily be injected through a 20 or 22 gauge needle. The samples stored at 52-56 C. showed about 15 per cent syneresis and were brownish yellow in color. Otherwise, they were similar to the ones stored at room temperature.

Thus, the authors concluded that it would appear that PAO could be stored for several years, even at tropical temperatures, without serious decomposition of the procaine penicillin G.

For little injuries...



and big sales!

B·F·I®

Antiseptic, first-aid dressing and surgical powder.

B. F. I POWDER keeps little injuries MINOR. Scratches, bruises, abrasions, cuts, minor wounds and burns are part of summer's routine. B. F. I POWDER is antiseptic, astringent and absorbent, and minimizes the danger of infection. It does not sting or burn. B. F. I POWDER also relieves athlete's foot, chafed skin, prickly heat.

These many uses make B. F. I POWDER a "must" for the medicine cabinet, and for the first-aid kit. AND—most important for you—these many uses make many repeat sales. So, keep up your stock of B. F. I POWDER the year-round.

Sprinkler-top tins of B. F. I POWDER are available in ¼-oz., 1¼-oz., and ½-lb. tins.



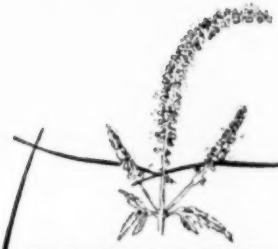
SHARP & DOHME

DIVISION OF MERCK & CO., Inc.
Philadelphia 1, Pennsylvania



FOR YOUR CUSTOMERS

A VACATION FROM HAY FEVER



FOR HAY FEVER

NEO-SYNEPHRINE® HCl

NASAL DECONGESTANT AND VASOCONSTRICTOR

Nasal: 0.25%, 0.5% and 1% solutions
0.5% jelly, 0.25% emulsion

New Nasal Spray: 0.25% solution
squeeze bottle

Ophthalmic: ⅛% solution

THENFADIL® HCl

EFFECTIVE, WELL TOLERATED ANTIHISTAMINIC

Oral: 15 mg. tablets

NEO-SYNEPHRINE THENFADIL

DECONGESTANT + ANTIHISTAMINIC

Nasal Solution of 0.25% Neo-Synephrine HCl and 0.1% Thenfadil HCl

Aromatic Viscous Nasal Solution and Nasal Jelly of 0.5% Neo-Synephrine HCl and 0.1% Thenfadil HCl

NEW

NTZ Nasal Solution

DECONGESTANT + ANTIHISTAMINIC + POTENTIATING PRESERVATIVE

Neo-Synephrine HCl 0.5%, Thenfadil HCl 0.1%, Zephiran® chloride (1:5000)

WINTHROP

WHETHER the inciting factor be ragweed or tree pollen, Neo-Synephrine, Neo-Synephrine Thenfadil and NTZ provide immediate day and night relief from stuffy, sneezing, running noses and watery eyes.

Saturation detailing and sampling by Winthrop-Stearns' professional representatives will be sending more hay fever prescriptions your way. Check your stock and make sure you have available all forms of Neo-Synephrine, as well as Neo-Synephrine Thenfadil and NTZ.

Pharmaceuticals in Daily Demand **Winthrop-Stearns** INC. *Ethically Advertised and Detailed*

1450 Broadway, New York 18, N.Y.

Neo-Synephrine (brand of phenylephrine); Thenfadil (brand of dethylandiamine); Zephiran (brand of benzalkonium chloride, refined), trademarks reg. U. S. Pat. Off.


NOW
Methyltestosterone
in two oral forms
ORETON-M®
(Methyltestosterone U.S.P.)
Buccal Tablets,
a new buccal preparation, have been added to our buccal hormone series. Methyltestosterone dissolved in the solid solvent base, POLYHYDROL,® assures complete absorption for maximal androgenic effect. Tablets of 10 mg., bottles of 30 and 100.
ORETON-M
Tablets,
as previously available, permit wide flexibility of dosage utilizing the conventional oral route. Tablets of 10 mg., bottles of 30, 100, and 500; and 25 mg., bottles of 15 and 100.
Schering CORPORATION • BLOOMFIELD, N. J.
In Canada: SCHERING CORPORATION, LTD., MONTREAL
ORETON-M
SCHERING

American Journal of Pharmacy

The American Journal of Pharmacy is the oldest continuously published scientific periodical of its kind in America, having been established by the Philadelphia College of Pharmacy in 1825. After the original issue there were three other preliminary numbers until 1829, when regular publication began. From then until 1852 four issues were published annually, with the single exception of 1847, when an additional number appeared. Six issues a year were printed from 1853 to 1870, at which time the Journal became a monthly publication.

Former Editors of the Journal have been: Daniel B. Smith, 1825-1828; Benjamin Ellis, 1829-1831; Robert E. Griffith, 1831-1836; Joseph Carson, 1836-1850; William Procter, Jr., 1850-1871; John M. Maisch, 1871-1893; Henry Trimble, 1893-1898; Henry Kraemer, 1898-1917; George M. Beringer, 1917-1921, and Ivor Griffith, 1921-1941.

Established and maintained as a record of the progress of pharmacy and the allied sciences, the Journal's contents and policies are governed by an Editor and a Committee on Publications elected by the members of the College.

Manuscripts should be sent to the Editor, who does not assume any responsibility in connection with the views or investigations of contributors of accepted manuscripts, other than to exercise general care in selection.

Contributors are allowed a reasonable number of copies of this Journal, free of charge, if applied for when the proof is returned.

Reprints, if desired, should be ordered when the proof is returned. The table below shows the *approximate* cost of reprints, the make-up of the pages to be identically the same as in the Journal. The actual cost may vary from the figures given, and will depend upon the amount of presswork, paper, binding, and other factors. Reprints containing half-tones may be expected to cost somewhat more than the rates given.

	2 pp.	4 pp.	8 pp.	16 pp.	Covers with Titles
50 copies.....	$ 4.50	$10.00	$16.25	$27.50	50 copies..... $ 7.50
100 "	7.50	13.75	21.25	40.00	100 " 12.50
250 "	10.00	17.50	27.50	53.75	250 " 17.50
500 "	15.00	25.00	35.00	68.75	500 " 26.25



an improved approach to ideal hypotensive therapy

Low toxicity. The only hypotensive drug that causes no dangerous reactions, and almost no unpleasant ones.

Slow, smooth action. The hypotensive effect is more stable than with other agents. Critical adjustment of dosage is unnecessary. Tolerance to the hypotensive effect has not been reported.

Well suited to patients with relatively mild, labile hypertension. A valuable adjunct to other agents in advanced hypertension.

Bradycardia and mild sedation increase its value in most cases. Symptomatic improvement is usually marked.

Convenient, safe to prescribe

The usual starting dose is 2 tablets twice daily. If blood pressure does not begin to fall in 7 to 14 days, and the medication is well tolerated, the dose may be safely increased. Should there be a complaint of excessive sleepiness, the dose should be reduced. Some patients are adequately maintained on as little as one tablet per day.

Dosage of other agents (veratrum or hydralazine) used in conjunction with Raudixin must be carefully adjusted to the response of the patient. If Raudixin is added to another maintenance regimen, the usual dose is applicable, and it is often possible to reduce the dose of the other agent or agents.

Supplied in tablets of 50 mg., bottles of 100 and 1000.

SQUIBB

RAUDIXIN
SQUIBB RAUWOLFIA SERPENTINA
Tablets

'RAUDIXIN' IS A TRADEMARK

AMERICAN JOURNAL OF PHARMACY, VOL. 125, AUGUST 1953, NO. 8